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KENYA EDUCATION NETWORK (KENET) INFRASTRUCTURE

(Current & Future Infrastructure; Potential & Emerging Possibilities)

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KENYAN & EDUCATIONAL INFRASTRUCTURE

- **Inherent Problems**
 - Costs
 - Satellite
 - Exploitation
 - Uptime
 - SLA's

- **Kenyan Educational Infrastructure**
 - Power Of Teamwork
 - Relative afford-ability
 - Need for high speed connectivity
 - Research work
 - Telecommunication

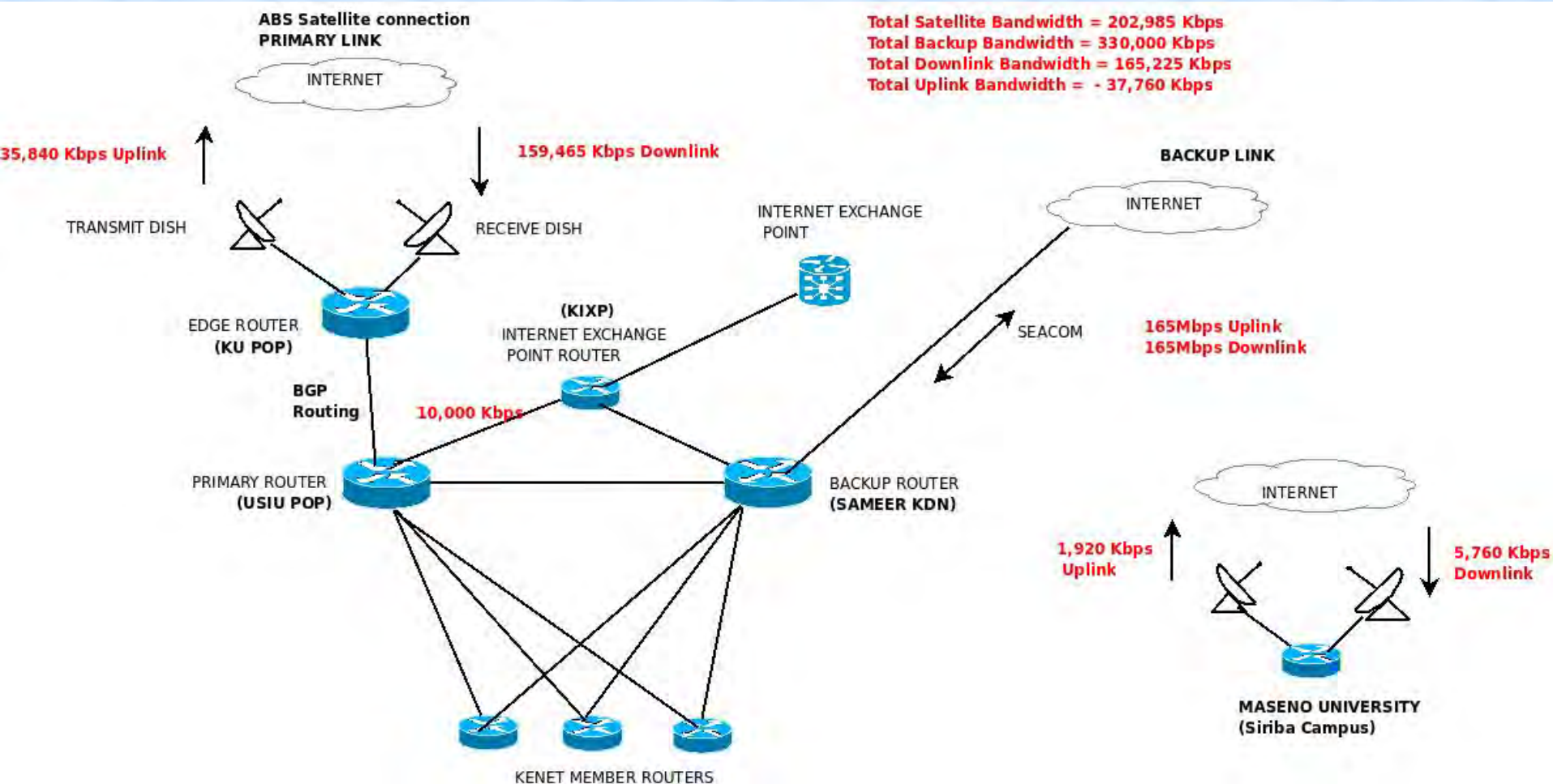
KENYA EDUCATION NETWORK TRUST

- KENET as Kenyan NREN
 - More than 8 years operation
 - July 2008 Network
 - 10 members directly served
 - Local traffic
 - International traffic
 - 12 members not served directly
 - Only local traffic
 - Total International traffic 32,000 Kbps
 - Currently upgrading network
 - Potential 75 Institutions
 - Current 52 Institutions
 - Local & international traffic
 - KENET Research
 - E-readiness research
 - 2007
 - 2008

CURRENT KENET INFRASTRUCTURE

- Enjoying government support
 - KTCIP Project
 - Initiated by government
 - Funded by world bank
- Potential 75 institutions
 - Local connectivity
 - Minimum 10Mbps
 - Last mile lease line
 - Fiber preferred
 - Radio also used
 - International connectivity
 - Satellite
 - Expensive
 - Higher Latencies
 - Slightly over 200Mbps Capacity
 - Capacity always maxed out
 - Need to increase allocations

KENET INFRASTRUCTURE





KENET SERVICES & CHALLENGES

- Current Services

- IPSec VPN
- Network design & support
- Technical training
- Server co-location
- Hosting services
- Custom server setup
- DNS services & domain registration
- E-learning & multimedia content
- Mirroring services
 - OpenOffice, Mozilla Firefox, Linux, FreeBSD, etc.

- Challenges

- Bandwidth pricing
- Terrestrial fiber network
 - Extensive in Nairobi only
 - Unexplained downtimes
 - Inter-operator sabotages
 - Network upgrades

EMERGING OPPOTUNITIES

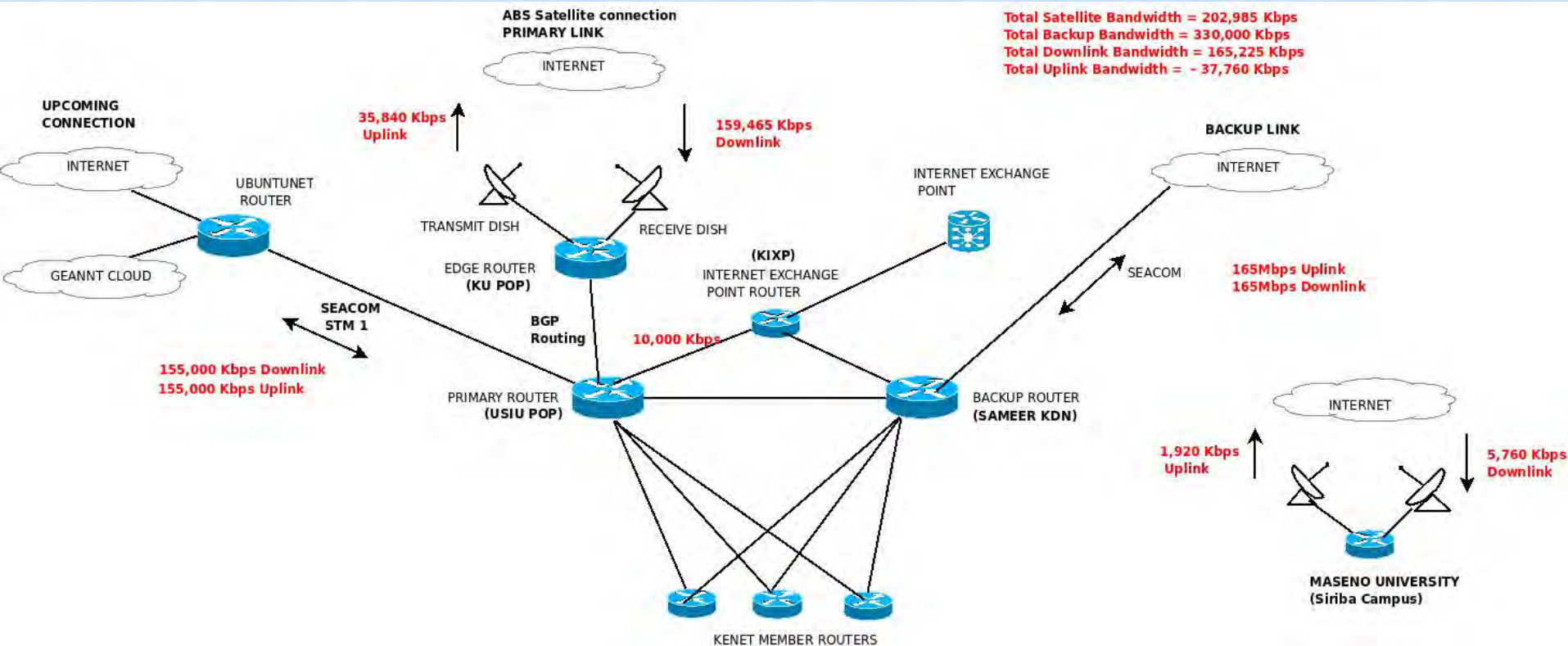
• Emerging Services

- Video conferencing infrastructure
- VOIP telephony
- Security Key Infrastructure
- Secure VPNs
- IPv6 & MPLS network
 - Core
 - Edge
- E-learning & Multimedia content
 - CD content provision
 - Web content provision
- Local content
 - Less than 5% local traffic
 - KENET encouraging content creation & provision

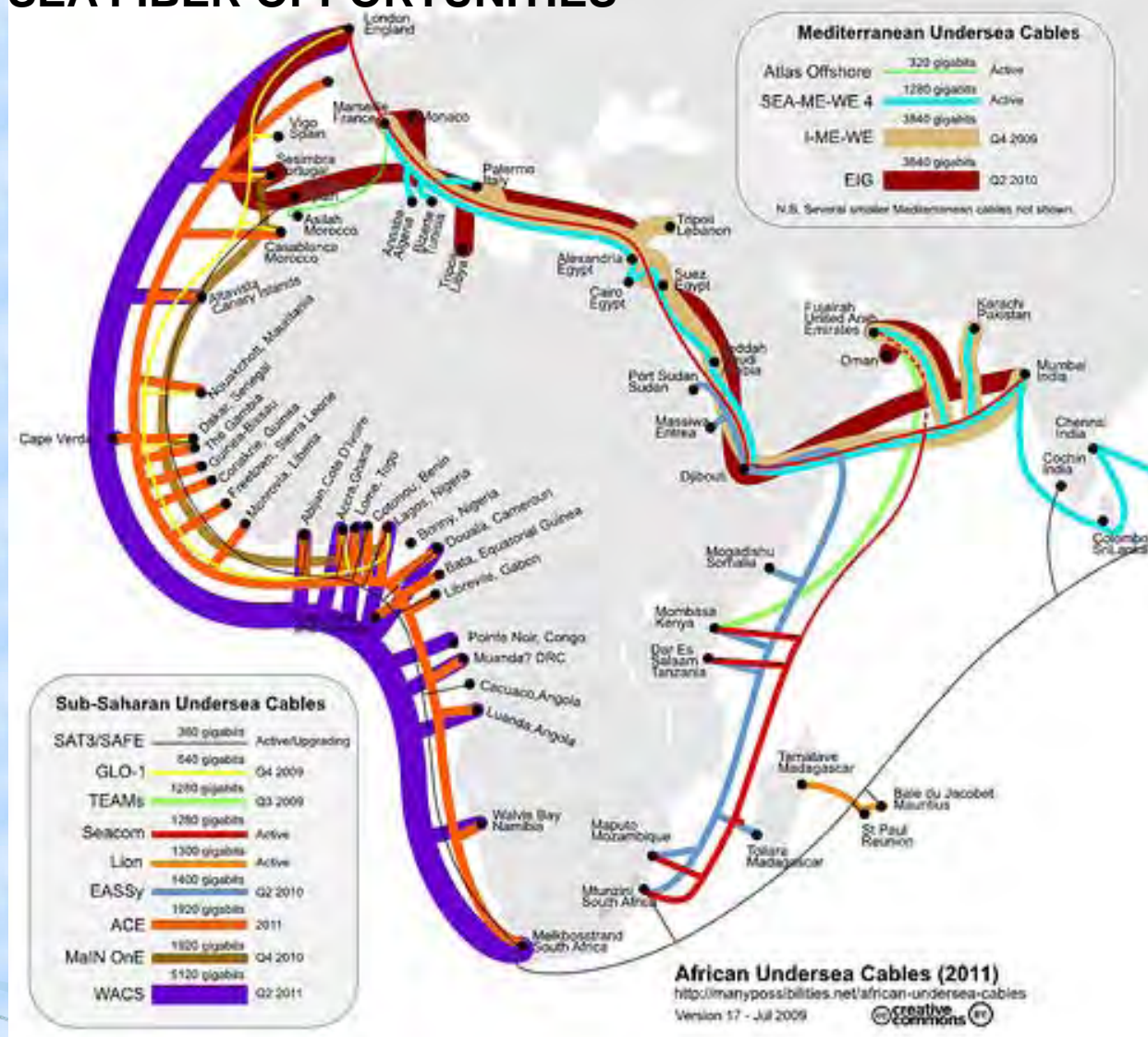
EMERGING OPPORTUNITIES

- Emerging Infrastructures
 - Terrestrial fiber network
 - NOFBI Project
 - KPLC Project
 - Telcos (KDN, JTL, Access Kenya, etc.)
 - Under sea fiber connectivity
 - Seacom
 - Operational
 - TEAMS
 - KENET allocated STM-4
 - Challenges with activating capacity
 - » Equipment purchase
 - » Transit services
 - EASSy
 - Not operational yet
 - Connectivity to GEANT
 - Fiber cable costs
 - Terrestrial fiber (10Mbps over 1 year equals 1 STM1 IRU!)
 - Possibility of owning last mile fiber and/or IRUs

EMERGING OPPORTUNITIES



UNDER SEA FIBER OPPORTUNITIES



CONCLUSION

- Benefit of TEAMS
- Last mile fiber
 - Own the last miles
- Need for teamwork
 - Educational institutions need to work as a group
- Need to empower educational institutions
 - Affordable infrastructure
 - Content creation

THANK YOU ?

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